

L15 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:781007 CAPLUS  
 DN 133:338271  
 ED Entered STN: 07 Nov 2000  
 TI Metal plates with anticorrosive surface treatment layers  
 IN Shoji, Hiromasa; Tadokoro, Kenichiro; Sakashita, Masao; Kaneda, Yoshihiro  
 PA Nippon Steel Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C23C022-00  
 ICS C09D005-08; C23C018-00; C23C026-00  
 CC 55-6 (Ferrous Metals and Alloys)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000309879	A2	20001107	JP 1999-117419	19990426 <--
PRAI	JP 1999-117419		19990426		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 2000309879	ICM	C23C022-00
		ICS	C09D005-08; C23C018-00; C23C026-00
AB	The plates have interlayers mainly consisting of Group IVB element oxides, hydroxide, oxyacids, and/or oxyacid hydrides and anticorrosive overlayer (having different composition with the interlayer) mainly consisting of oxyacids, oxyacid hydrides, or their mixts. of rare earth metals and/or Group IVB elements. The coatings are free of hexavalent chromium.		
ST	Group IVB oxyacid compd anticorrosive layer; metal coating hexavalent chromium free anticorrosive; corrosion resistant coating metal plate; rare earth metal anticorrosive coating metal		
IT	Coating materials (anticorrosive; metal plates having anticorrosive coatings free of hexavalent chromium)		
IT	Galvanized steel RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (electrogalvanized; metal plates having anticorrosive coatings free of hexavalent chromium)		
IT	Group IVB element oxides RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (interlayer; metal plates having anticorrosive coatings free of hexavalent chromium)		
IT	Group IVB element compounds Rare earth compounds RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (interlayers and anticorrosive layers; metal plates having anticorrosive coatings free of hexavalent chromium)		
IT	Galvanized steel RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (metal plates having anticorrosive coatings free of hexavalent chromium)		
IT	12055-23-1, Hafnium oxide 13463-67-7, Titanium oxide, processes 14644-61-2, Zirconium sulfate RL: PEP (Physical, engineering or chemical process); PROC (Process) (anticorrosive layer forming bath additive; metal plates having anticorrosive coatings free of hexavalent chromium)		

IT 537-00-8, Cerium acetate 7664-80-4, Octyl thioglycolate  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (anticorrosive overlayer formation bath additive; metal plates having  
 anticorrosive coatings free of hexavalent chromium)

IT 7664-38-2, Phosphoric acid, processes 17309-53-4, Cerium nitrate  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (anticorrosive overlayer from; metal plates having anticorrosive  
 coatings free of hexavalent chromium)

IT 99237-07-7, Tetramethoxyhafnium  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (interlayer formation by CVD of; metal plates having anticorrosive  
 coatings free of hexavalent chromium)

IT 7440-32-6, Titanium, processes 7440-67-7, Zirconium, processes  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (interlayer formation by sputtering of; metal plates having  
 anticorrosive coatings free of hexavalent chromium)

IT 16919-27-0 16923-95-8, Dipotassium hexafluorozirconate  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (interlayer from; metal plates having anticorrosive coatings free of  
 hexavalent chromium)

IT 24670-27-7  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (interlayer-formation bath additive; metal plates having anticorrosive  
 coatings free of hexavalent chromium)

IT 1314-23-4, Zirconium oxide, properties 13765-95-2, Zirconium phosphate  
 13772-29-7  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (interlayer; metal plates having anticorrosive coatings free of  
 hexavalent chromium)

IT 12609-46-0, Aluminum 90, silicon 10  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (steel coated with; metal plates having anticorrosive coatings free of  
 hexavalent chromium)

RN 12055-23-1  
 RN 13463-67-7  
 RN 14644-61-2  
 RN 537-00-8  
 RN 7664-80-4  
 RN 7664-38-2  
 RN 17309-53-4  
 RN 99237-07-7  
 RN 7440-32-6  
 RN 7440-67-7  
 RN 16919-27-0  
 RN 16923-95-8  
 RN 24670-27-7  
 RN 1314-23-4  
 RN 13765-95-2  
 RN 13772-29-7  
 RN 12609-46-0

L15 ANSWER 2 OF 3. WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2001-284829 [30] WPIX

DNC C2001-086813

TI Surface treated metal plate has intermediate layer containing IVA group  
 compounds, and corrosion-resistant coating layer containing rare earth  
 and/or IVA group compounds.

DC A82 E37 G02 M14

PA (YAWA) NIPPON STEEL CORP

CYC 1

PI JP 2000309879 A 20001107 (200130)\* 9 C23C022-00 <--

ADT JP 2000309879 A JP 1999-117419 19990426

PRAI JP 1999-117419 19990426

IC ICM C23C022-00

ICS C09D005-08; C23C018-00; C23C026-00

AB JP2000309879 A UPAB: 20010603

NOVELTY - A surface treated metal plate has an intermediate layer and corrosion-resistant coating layer of different composition. The intermediate layer contains IVA group oxide, hydroxide, oxyacid compound and/or oxyacid hydride. The corrosion-resistant coating layer contains oxyacid compound and/or oxyacid hydride of rare earth and/or IVA group element.

USE - As galvanized iron sheet, zinc group alloy plated steel plate, aluminum plated steel plate, cold rolled steel sheet used in motor vehicles, domestic electrical appliances, building materials.

ADVANTAGE - The surface treated metal plate has excellent anti-corrosion property and environmental compatibility, as the coating layer does not contain hexavalent chrome.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: A12-B04; E34; E35-L; G02-A05E; M14-K

L15 ANSWER 3 OF 3 JAPIO (C) 2005 JPO on STN

AN 2000-309879 JAPIO

TI SURFACE TREATED METALLIC SHEET

IN SHIYOUJI HIROMASA; TADOKORO KENICHIRO; SAKASHITA MASAO; KANEDA YOSHIHIRO

PA NIPPON STEEL CORP

PI JP 2000309879 A 20001107 Heisei

AI JP 1999-117419 (JP11117419 Heisei) 19990426

PRAI JP 1999-117419 19990426

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000

IC ICM C23C022-00

ICS C09D005-08; C23C018-00; C23C026-00

AB PROBLEM TO BE SOLVED: To produce a surface treated metallic sheet having a corrosion preventive coating layer which is excellent in corrosion resistance and does not contain hexavalent chromium at all.

SOLUTION: This metallic sheet has an intermediate layer essentially consisting of the oxides, hydroxides oxyacid compds. and/or hydrogen oxyacid compds. of the group IVA elements (such as zirconium) and has a corrosion resistant coating layer essentially consisting of rare earths (such as lanthanum and cerium) and/or the oxacid compds. or hydrogen oxyacid compds. or the mixture thereof (where the compsn. of the intermediate layer and that of the corrosion resistant coating layer are not the same). This coating film can contain resins, rare earth compds. and organic corrosion inhibitors.

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